Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claim 1. (currently amended) A hot-dip galvanized steel sheet comprising:

a plating layer consisting essentially of a η phase; and

an oxide layer disposed on a surface of the plating layer,

said oxide layer having an average thickness of 10 nm or more; and

the oxide layer comprising a Zn-based oxide layer and an Al-based oxide layer, the Zn-based oxide layer having a Zn/Al atomic concentration ratio of more than 1 and the Al-based oxide layer having a Zn/Al atomic concentration ratio of less than 1,

wherein the Zn-based oxide layer has microirregularities; and

the microirregularities have a mean spacing (S) determined based on a roughness curve of 1,000 nm or less and an average roughness (Ra) of 100 nm or less.

Claim 2. (original) The hot-dip galvanized steel sheet according to claim 1, wherein

the plating layer has concavities and convexities on the surface thereof ; and

the Zn-based oxide layer is disposed at least on the concavities.

Claim 3. (cancelled)

Claim 4. (original) The hot-dip galvanized steel sheet according to claim 1, wherein

the Zn-based oxide layer comprises an oxide containing Zn and Fe; and

the Zn-based oxide layer has a Fe atomic concentration ratio of 1 to 50 atomic percent, the atomic concentration ratio being defined by an expression Fe/(Zn + Fe).

Claim 5. (original) The hot-dip galvanized steel sheet according to claim 1, wherein the Zn-based oxide layer has an areal rate of 15% or more with respect to the surface of the plating layer.

Claim 6. (original) The hot-dip galvanized steel sheet according to claim 1, wherein the oxide layer has an average thickness of 10 to 200 nm.

Claim 7. (original) The hot-dip galvanized steel sheet according to claim 1, wherein the Zn-based oxide layer has microirregularities with a

network structure including convexities and discontinuous concavities surrounded by the convexities.

Claim 8. (original) The hot-dip galvanized steel sheet according to claim 1, wherein the Zn-based oxide layer has a Zn/Al atomic concentration ratio of 4 or more.

Claim 9. (original) The hot-dip galvanized steel sheet according to claim 8, wherein the Zn-based oxide layer has an areal rate of 70% or more with respect to the surface of the plating layer.

Claim 10. (original) The hot-dip galvanized steel sheet according to claim 8, wherein the Zn-based oxide layer is disposed on the concavities of the surface of the plating layer formed by temper rolling, and on the convexities or planar portions other than the concavities.

Claim 11. (original) The hot-dip galvanized steel sheet according to claim 8, wherein

the Zn-based oxide layer comprises an oxide containing Zn and Fe; and

the Zn-based oxide layer has a Fe atomic concentration ratio defined by an expression Fe/(Zn + Fe) being 1 to 50 atomic percent.

Claim 12. (original) The hot-dip galvanized steel sheet according to claim 8, wherein

the Zn-based oxide layer has microirregularities; and

the Zn-based oxide layer has a network structure that is formed by convexities and discontinuous concavities surrounded by the convexities.

Claim 13. (currently amended) A hot-dip galvanized steel sheet, comprising

a plating layer consisting essentially of a η phase; and

a Zn-based oxide layer containing Fe disposed on the surface of the plating layer,

the Zn-based oxide layer having an Fe atomic concentration ratio of 1 to 50 atomic percent, the Fe atomic concentration ratio being defined by the expression Fe/(Fe + Zn),

wherein the Zn-based oxide layer has a mean spacing (S) determined based on a roughness curve being 10 to 1,000 nm and an average roughness (Ra) of 4 to 100 nm.

Claim 14. (original) The hot-dip galvanized steel sheet according to claim 13, wherein the Zn-based oxide layer has microirregularities with a network structure including convexities and discontinuous concavities surrounded by the convexities.

Claim 15. (original) The hot-dip galvanized steel sheet according to claim 13, wherein the Zn-based oxide layer has an areal rate of 15% or more with respect to the surface of the plating layer.

Claim 16. (currently amended) A hot-dip galvanized steel sheet, comprising

a plating layer consisting essentially of a η phase; and

a Zn-based oxide layer containing Fe disposed on a surface of the plating layer,

the Zn-based oxide layer having microirregularities with a network structure including convexities and discontinuous concavities surrounded by the convexities,

wherein the Zn-based oxide layer has a mean spacing (S) determined based on a roughness curve being 10 to 1,000 nm and an average roughness (Ra) of 4 to 100 nm.

Claim 17. (cancelled)

Claim 18. (original) The hot-dip galvanized steel sheet according to claim 16, wherein the Zn-based oxide layer has an areal rate of 70% or more with respect to the surface of the plating layer.

Claim 19. (original) The hot-dip galvanized steel sheet according to claim 16, wherein the Zn-based oxide layer is disposed on the planar portions of the surface of the plating layer other than the concavities formed by temper rolling.

Claim 20. (original) The hot-dip galvanized steel sheet according to claim 19, wherein, the Zn-based oxide layer, which is disposed on the planar portions, has a mean spacing (S) determined based on the roughness curve of 10 to 500 nm and the average roughness (Ra) of 4 to 100 nm.

Claim 21. (withdrawn) A method for producing a hot-dip galvanized steel sheet, comprising the steps of:

hot-dip-galvanizing a steel sheet to form a hot-dip galvanized layer;

temper-rolling the steel sheet provided with the hot-dip galvanized layer; and

subjecting the temper-rolled steel sheet to an oxidation treatment by bringing the temper-rolled steel sheet into contact with an acidic solution having a pH buffering effect, and retaining the temper-rolled steel sheet in the solution for 1 to 30 seconds before washing with water.

Claim 22. (withdrawn) The method according to claim 21, further comprising an activation step of activating the surface before or after

the temper rolling step.

Claim 23. (withdrawn) The method according to claim 22, wherein the activation step further comprises controlling an Al-based oxide content in a surface oxide layer before the oxidation step so that an Al concentration is less than 20 atomic percent.

Claim 24. (withdrawn) The method according to claim 22, wherein the activation step comprises bringing the steel sheet into contact with an alkaline solution with a pH of 11 or more at 50°C or more for 1 second or more.

Claim 25. (withdrawn) The method according to claim 22, wherein the activation step is performed before the temper rolling step.

Claim 26. (withdrawn) The method according to claim 21, wherein the acidic solution contains 1 to 200 g/l of Fe ions.

Claim 27. (withdrawn) A method for producing a hot-dip galvanized steel sheet, comprising the steps of:

hot-dip-galvanizing a steel sheet to form a hot-dip galvanized layer;

temper-rolling the steel sheet provided with the hot-dip galvanized layer;

subjecting the temper-rolled steel sheet to an oxidation treatment by bringing the temper-rolled steel sheet into contact with an acidic solution having a pH buffering effect and containing 5 to 200 g/l of Fe ions with a pH of 1 to 3, and retaining the temper-rolled steel sheet in the solution for 1 to 30 seconds before washing with water; and

activating the surface before or after the temper rolling step.

Claim 28. (withdrawn) A method for producing a hot-dip galvanized steel sheet, comprising the steps of:

hot-dip-galvanizing a steel sheet to form a hot-dip galvanized layer;

temper-rolling the steel sheet provided with the hot-dip galvanized layer;

subjecting the temper-rolled steel sheet to an oxidation treatment by bringing the temper-rolled steel sheet into contact with an acidic solution having a pH buffering effect with a pH of 1 to 5, and retaining the temper-rolled steel sheet in the solution for 1 to 30 seconds before washing with water; and

activating the surface before or after the temper rolling step.